IN THE CLAIMS:

A complete listing of the claims is set forth below. Please amend the claims as follows:

1-36. **(Cancelled)**

37. **(Currently Amended)** A computer-implemented system for manufacturing forecasting, the system comprising one or more memory units and one or more processing units operable to:

store, in one or more of the memory units, end product demand information representative of a predicted future demand for an end product, and intermediate product information representative of ~~a total~~ an amount per time period of an intermediate product that can be produced and intermediate product demand information representative of a predicted future demand for the intermediate product;

determine, based on the end product demand information, a demand quantity of the end product that a manufacturer is to produce during a specified time period to satisfy the predicted future demand, wherein production of the demand quantity of the end product requires producing a first intermediate-product quantity of an intermediate product that is further processed to produce the demand quantity of the end product, and requires producing a first by-product quantity of a by-product;

determine, based on the intermediate product information and the demand quantity, a second intermediate-product quantity of the intermediate product that the manufacturer can produce during the specified time period in addition to the first intermediate-product quantity, wherein production of the second-intermediate-product quantity requires producing a second by-product quantity; [[and]]

determine, based on the second intermediate-product quantity and the intermediate product demand information, whether to produce any of the second intermediate-product quantity of the intermediate product; and

determine, based on the demand quantity of the end product and the second intermediate-product quantity, a total by-product quantity of the by-product that the manufacturer can produce during the specified time period.

38. **(Previously Presented)** The system of claim 37, wherein the end product comprises a chemical end product, the intermediate product comprises a chemical intermediate product, and the by-product comprises a chemical by-product.

39. **(Cancelled)**

40. **(Currently Amended)** The system of claim [[39,]] 37, wherein the one or more processing units are further operable to store, in the one or more memory units, by-product information representative of a total amount of by-product that can be produced during the specified ~~particular~~ time period.

41. **(Currently Amended)** A computer-implemented method of manufacturing forecasting, the method being performed using a computer system comprising one or more memory units and one or more processing units, the method comprising:

storing, in one or more of the memory units, end product demand information representative of a predicted future demand for an end product, and intermediate product information representative of ~~a total~~ an amount per time period of an intermediate product that can be produced and intermediate product demand information representative of a predicted future demand for the intermediate product;

using the computer system to determine, based on the end product demand information, a demand quantity of the end product that a manufacturer is to produce during a specified time period to satisfy the predicted future demand, wherein production of the demand quantity of the end product requires producing a first intermediate-product quantity of an intermediate product that is further processed to produce the demand quantity of the end product, and requires producing a first by-product quantity of a by-product;

using the computer system to determine, based on the intermediate product information and the demand quantity, a second intermediate-product quantity of the intermediate product that the manufacturer can produce during the specified time period in addition to the first intermediate-product quantity, wherein production of the second-intermediate-product quantity requires producing a second by-product quantity; [[and]]

using the computer system to determine, based on the second intermediate-product quantity and the intermediate product demand information, whether to produce any of the second intermediate-product quantity of the intermediate product; and

using the computer system to determine, based on the demand quantity of the end product and the second intermediate-product quantity, a total by-product quantity of the by-product that the manufacturer can produce during the specified time period.

42. **(Previously Presented)** The method of claim 41, wherein the end product comprises a chemical end product, the intermediate product comprises a chemical intermediate product, and the by-product comprises a chemical by-product.

43. **(Cancelled)**

44. **(Currently Amended)** The method of claim [[43,]] 41, further comprising storing, in the one or more memory units, by-product information representative of an amount of by-product that can be produced during the ~~particular~~ specified time period.

45. **(Currently Amended)** A computer-readable medium having encoded thereon software for manufacturing forecasting, said software including instructions for executing the steps of:

storing, in one or more of the memory units, end product demand information representative of a predicted future demand for an end product, and intermediate product information representative of ~~a total~~ an amount per time period of an intermediate product that can be produced and intermediate product demand information representative of a predicted future demand for the intermediate product;

using the computer system to determine, based on the end product demand information, a demand quantity of the end product that a manufacturer is to produce during a specified time period to satisfy the predicted future demand, wherein production of the demand quantity of the end product requires producing a first intermediate-product quantity of an intermediate product that is further processed to produce the demand quantity of the end product, and requires producing a first by-product quantity of a by-product;

using the computer system to determine, based on the intermediate product information and the demand quantity, a second intermediate-product quantity of the intermediate product that the manufacturer can produce during the specified time period in addition to the first intermediate-product quantity, wherein production of the second-intermediate-product quantity requires producing a second by-product quantity; [[and]]

using the computer system to determine, based on the second intermediate-product quantity and the intermediate product demand information, whether to produce any of the second intermediate-product quantity of the intermediate product; and

using the computer system to determine, based on the demand quantity of the end product and the second intermediate-product quantity, a total by-product quantity of the by-product that the manufacturer can produce during the specified time period.

46. **(Previously Presented)** The computer-readable medium of claim 45, wherein the end product comprises a chemical end product, the intermediate product comprises a chemical intermediate product, and the by-product comprises a chemical by-product.

47. **(Cancelled)**

48. **(Currently Amended)** The computer-readable medium of claim [[47,]] 45, wherein the software further includes instructions for storing, in the one or more memory units, by-product information representative of a total amount of by-product that can be produced during the ~~particular~~ specified time period.

49. **(Previously Presented)** The system of claim 37, wherein the one or more processing units are further operable to store, in the one or more memory units, by-product information identifying an amount of a by-product that will be produced during production of the end product.

50. **(Previously Presented)** The method of claim 41, further comprising storing, in the one or more memory units, by-product information identifying an amount of a by-product that will be produced during production of the end product.

51. **(Previously Presented)** The computer-readable medium of claim 45, wherein the software further includes instructions for storing, in the one or more memory units, by-product information identifying an amount of a by-product that will be produced during production of the end product.